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Revised January 1981
Revised January 1988

MONTANA SMOKE MANAGEMENT

MAY 32 1989

MEMORANDUM OF AGREEMENT

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This Agreement is entered into effective July 31, 1978. The agencies and companies which are signatories to this Agreement hereby agree to abide by the Cooperative Smoke Management Plan for Montana attached hereto. As each agency and company signs this Agreement, they shall automatically become a member of the State Airshed Group described herein. Other agencies and companies may from time to time become a party to this Agreement and a member of the State Airshed Group by signing this Agreement and submitting a copy to each of the other signatories. Prospective members must meet membership requirements established by the State Airshed Group (membership requirements on file with Monitoring Unit). The signatories hereto are dedicated to the preservation of air quality in Montana. However, the continuing importance of prescribed burning for removal of logging residue to assure protection and regeneration of forest areas and for other accepted forest practices, such as wildlife habitat improvement, is recognized.

The objectives of this Agreement are as follows:

1. To minimize or prevent the accumulation of smoke in Montana to such degree as is necessary to protect State and federal ambient air quality standards when prescribed burning is necessary for the conduct of accepted forest practices such as hazard reduction, regeneration and wildlife habitat improvement. The development of alternative methods shall be encouraged when such methods are practical.
2. To develop a smoke management plan for reporting and coordinating burning operations on all forest and range lands in the State. Guidelines in the plan will be based upon the principles of and technical information currently available on smoke dispersion and on State and federal air

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quality regulations. A copy of the Smoke Management Plan is attached and incorporated herein by reference. The Smoke Management Plan shall be reviewed periodically and changes may be made with the approval of all signatories or their designated representative. Such approval shall be given in writing.

3. At the end of each burning year, evaluate the program, review the Agreement and improve the Smoke Management Plan where feasible.

Any signatory hereto may withdraw from this Agreement upon thirty (30) days written notice to the State Airshed Group in care of the Montana Department of Health and Environmental Sciences, Air Quality Bureau.

Agreed to by MONTANA SMOKE MANAGEMENT AGREEMENT signatories:

J. C. [Signature] 10/25/88 *[Signature]* 4/14/88
Director, Department of Health and Environmental Sciences Date Area Director (BIA) Date

John W. Mumm 4/6/88 *Gary G. Brown* 4/7/88
Regional Forester, R-1 (USFS) Date Administrator, Division of Forestry
Department of State Lands Date

[Signature] 4-18-88 *[Signature]* 4/5/88
State Director (BLM) Date Plum Creek Timber Company, Inc. Date

[Signature] 10/11/88 *Ernest B. Couch* 4-17-88
Superintendent, Glacier National Park Date Champion Timberlands
Champion International Corporation Date

Thomas H. [Signature] 5/20/88 *[Signature]* 10-14-88
Director, National Weather Service, Western Region Date Director, Department of Fish,
Wildlife & Parks Date



Montana Smoke Management Memo of Agreement Signatories:(2nd page)

Ben Clary 7/27/88 *Bonnie J. Schuch* 9/16/88
act Superintendent, Yellowstone National Park Date Area Manager - U. S. Fish & Wildlife Service Date

W. McDonald 4/26/88
Chairman, Missoula City-County Air Pollution Control Board Date

Date

Date

Date

Date

Date

Date



STATE OF MONTANA COOPERATIVE SMOKE MANAGEMENT PLAN

(Revised: January 1988)

DEFINITIONS

"Monitoring Unit" means a two-man unit located in Missoula, Montana, with the responsibility to coordinate the daily operation of the Montana Cooperative Smoke Management Plan. This unit consists of a representative of the Air Quality Bureau of the Montana Department of Health and Environmental Sciences and a representative of the Division of Forestry of the Montana Department of State Lands.

"National Weather Service" means those units of the National Weather Service's Western Region which are located within the State of Montana.

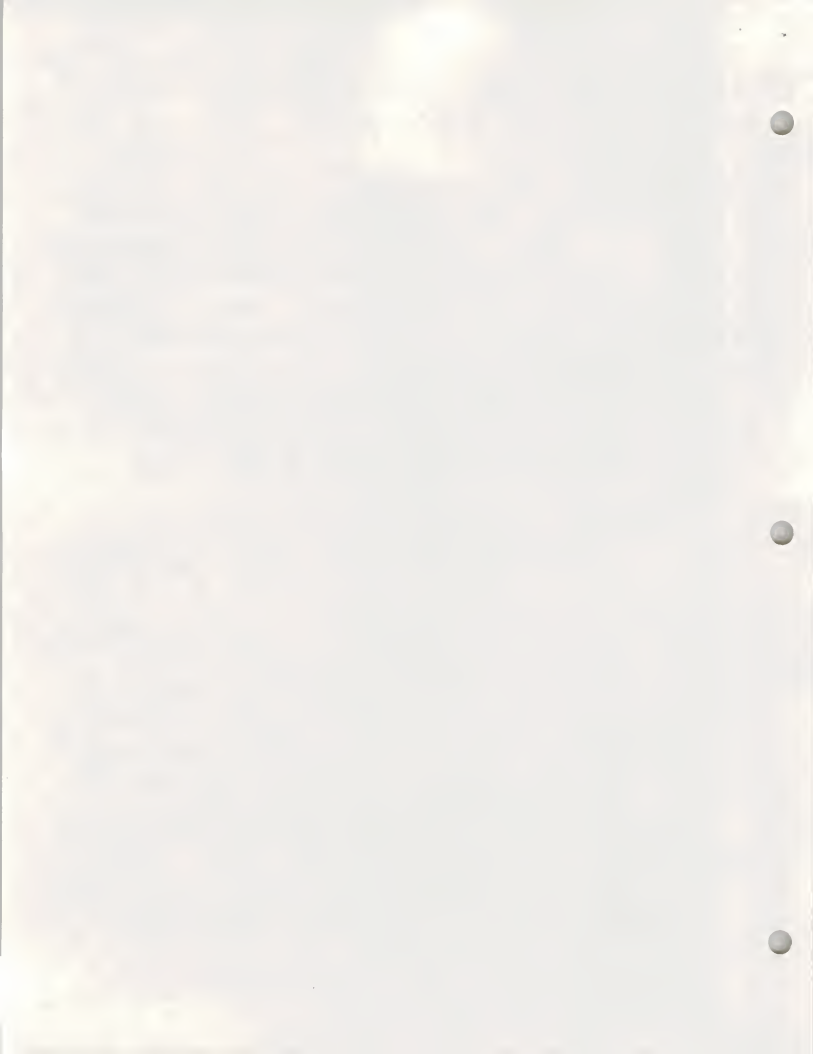
"Fire Weather Forecaster" means those National Weather Service personnel who are assigned fire weather forecasting responsibilities within the State of Montana.

"Fire Weather Zone" means any of several geographical divisions of Montana which are delineated for the purpose of providing local fire weather forecasts (see Appendix B).

"Local Airshed" means any of the ten geographical divisions of Montana which were delineated by the State Airshed Group for the purpose of organizing and operating the Montana Cooperative Smoke Management Plan (see map Appendix A -- A narrative description of each local airshed is on file at the Monitoring Unit).

"Local Airshed Committee" means a committee consisting of representatives from the agencies and companies conducting wildland burning within the local airshed, as well as representatives of the local health department and National Weather Service. This committee meets at least once per year to discuss and coordinate airshed wildland burning and smoke problems.

"Local Airshed Coordinator" means that member of the Local Airshed Committee



who is chairman of the Local Airshed Committee and coordinates wildland burning within that airshed.

"State Airshed Group" means a committee consisting of one representative from each of the agencies and companies signing the Montana Cooperative Smoke Management Plan Memorandum of Agreement. This group meets at least once per year to discuss and coordinate operation of the Montana Cooperative Smoke Management Plan.

"Impact Zone" means any area of the State of Montana which the State Airshed Group determines to be a smoke sensitive area.

"Burner" means any organizational subunit of a member agency or company which has the responsibility for the actual ignition of a prescribed fire in a given area of the State.



POLICY

The cooperative effort of all organizations involved in the use of prescribed fire for the disposal of logging residue, or for the accomplishment of other land management objectives is essential for the success of this plan.

Each land management organization and signatory to the Agreement is responsible for proper smoke management in its area of operations. Each organization will adhere to the airshed groups restriction procedures which enable the Monitoring Unit to reduce burning, stop burning in specific areas or cease burning entirely when meteorological or existing air quality conditions so warrant.

During the months of September through November, the Monitoring Unit is responsible for the daily monitoring of meteorological data, air quality information, and planned forestry burning. It is also responsible for notifying Local Airshed Coordinators when acceptable limits of smoke accumulation are threatened to be exceeded.

By virtue of membership in the State Airshed Group, each signatory is granted an annual air quality permit. However, should a member organization fail to follow any procedures, requirements or restrictions issued under this Plan, it will be considered grounds for revocation of the annual permit, and/or membership in the State Smoke Management Program. The Air Quality Bureau of the Department of Health and Environmental Sciences or a local air pollution control agency may take appropriate action as authorized under existing State or local statutes, rules and regulations for violation of open burning rules and regulations.

ORGANIZATION

The organizational structure developed to operate the Cooperative Smoke Management Plan is shown in Figure 1. By virtue of signing the Memorandum of Agreement each signatory receives full membership in the State Airshed Group. This Group, composed of representatives of the entire membership, meets at least



once each year (normally in January) and administers the Cooperative Smoke Management Plan. The Group may meet at other times on an as-needed basis. Specifically, the role of the State Airshed Group is to:

- a) Develop policy;
- b) Define standards;
- c) Establish procedures;
- d) Determine appropriate boundaries for airsheds and impact zones;
- e) Provide direction to the Monitoring Unit in carrying out the daily operation of the Plan;
- f) Resolve interairshed, interstate and international smoke problems;
- g) Annually review and evaluate the results of the fall burning season;
- h) Provide smoke management training for member organizations; and
- i) Prepare and disseminate information on open burning.

The Monitoring Unit is responsible to the State Airshed Group for the daily operation and management of the Smoke Management Plan. This Unit is the decision making body during the fall burning season, and provides the daily coordination and communication necessary to implement necessary burning restrictions.

For operational purposes the State is divided into ten geographically defined airsheds (see map, Appendix A), each of which may be further subdivided if necessary. In each of the ten airsheds there is a Local Airshed Committee, composed of representatives of each member organization with operations in the airshed. Participation on the Committee by non-member organizations and county officials is encouraged. One member of the Committee will be designated as the Local Airshed Coordinator who is responsible for developing and maintaining a communication system, and for coordinating all burning by members within the airshed.

The next level of the structure is composed of the various field offices of member organizations within each of the airsheds. This is the level where the



final responsibility for the actual burning lies. The purpose of the Smoke Management Plan is to provide accurate and reliable guidance and direction to the individuals doing the actual burning.



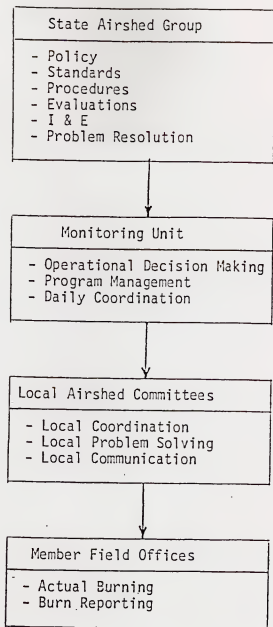


Figure 1 Organizational Structure



OPERATING PROCEDURES

Figure 2 shows the flow of information which takes place daily during the fall burning season (September through November). During this period the Monitoring Unit is in full operation, and each day makes a decision as to whether or not any restrictions on burning are necessary for the following day. Information available to make this decision includes: (1) the amount of burning planned, (2) forecast meteorological conditions, and (3) an evaluation of existing air quality.

Planned Burning

Prior to September 1 of each year, all cooperating agency and company representatives are required to provide the Monitoring Unit and the appropriate Local Airshed Coordinator a list of all prescribed burns planned for the fall burning season. The following information should be included for each planned burn:

- (1) Identification number (assigned by Program Coordinator to each member)
- (2) Legal description
- (3) Elevation
- (4) Number of acres
- (5) Estimate of fuel loading (tons/acre)
- (6) Type of burn (broadcast, piles, etc.)
- (7) Airshed Number

In addition, each Burner is required to submit a daily report of planned burning for the next day to the Local Airshed Coordinator, and through channels to the Monitoring Unit. This report must reach the Monitoring Unit by 11:00 a.m. each day, and should include:

- (1) Identification numbers of burns planned for the following day (tomorrow within impact zone(s));

- (2) Number of acres and number of burns planned for the following day within the airshed, but outside of the impact zone(s);
- (3) Identification numbers for burns planned for Saturday, Sunday and Monday must be submitted on Friday morning report.

The report should be sent over the DG network if possible. However, for those Burners without access to the DG network, a phone call will suffice.

Accomplishment Report

Prior to the last day of the calendar year, member representatives will compile and submit to the Program Coordinator a final listing by burn number of all prescribed burns accomplished during the calendar year. The accomplishment report must contain the dates on which the burns were accomplished. The Program Coordinator will compile and distribute a final accomplishment report for the full membership at the January meeting.



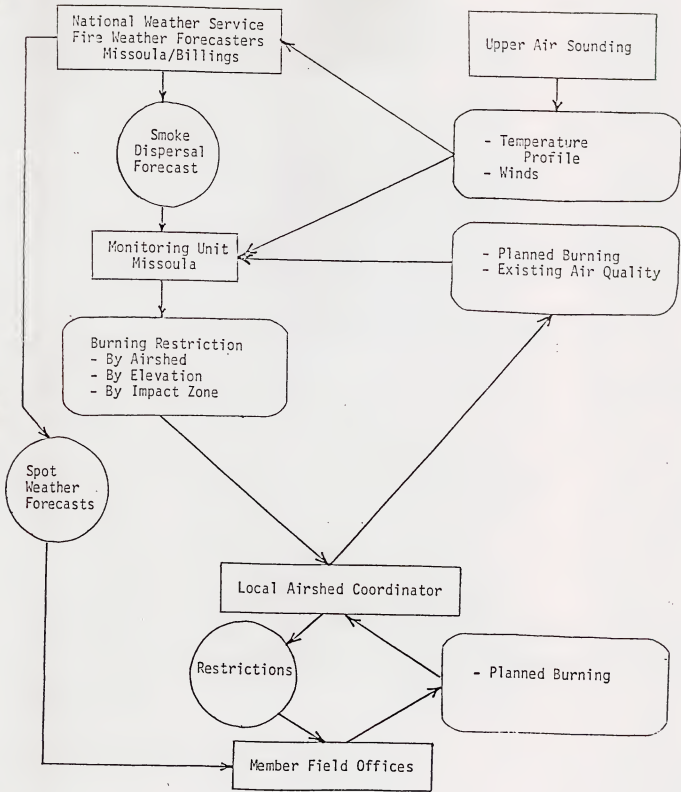


Figure 2 Operational Flow Chart
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Meteorological Conditions

Each morning (Monday-Friday) a weather balloon (PIBAL with temperature sonde) will be used to obtain an upper air sounding at selected cities in Western Montana. The resulting temperature and wind information will be plotted by the Monitoring Unit and then relayed to the National Weather Service office at Missoula.

The National Weather Service will compile all available meteorological data and issue an updated management forecast each day at approximately 9:00 a.m., and a forecast for the following day at approximately 3:30 p.m. These dispersal forecasts shall be referenced to existing fire weather zones (Appendix B), and sent out over the DG network.

Burners may also work directly with National Weather Service Fire Weather Forecasters to obtain spot weather forecasts for specific burns.

Existing Air Quality

The Monitoring Unit shall consider existing air quality conditions and other local data in each airshed in determining the need for burning restrictions. Specifically, the amount of residual smoke from previous days' burning shall be evaluated. The Local Airshed Coordinators are the primary source of this information.

Restrictions to Burning

Upon analysis of all available information concerning planned burning, forecast meteorological conditions and existing air quality, the Monitoring Unit shall decide whether any restrictions to burning are necessary for the following day. Restrictions can be:

- a) Statewide;
- b) By individual airshed(s);
- c) By elevation within an airshed(s);



(d) By Impact Zone(s); and











(e) By time periods.

The Monitoring Unit shall notify the appropriate Local Airshed Coordinator(s) by 4:00 p.m. if restrictions are to be in effect for the following day. If no restrictions are to be in effect for the following day a "no restrictions" message will also be broadcast by 4 p.m. The Local Airshed Coordinator(s) shall, in turn, notify cooperating agencies and companies of any restrictions or messages by 5:00 p.m. Individual agencies and companies are then totally responsible to ensure that all burning crews are aware of restrictions. The Monitoring Unit shall send all information regarding restrictions over the DG network, and also by phone to any Local Airshed Coordinator not on the network.

All restrictions are in effect for the time period indicated on the daily message (normally 24 hours). Restrictions for weekends (issued on Fridays) will indicate the effective time period. If it is necessary to extend restrictions for a second or subsequent day, the Monitoring Unit must reissue them using the procedures described above. If a Burner is not notified of a restriction by 5:00 p.m., it is his/her responsibility to call the local Airshed Coordinator or the toll-free number in Helena to determine if burning is authorized for the following day. The toll-free number is (800) 225-6779.

The final responsibility for ignition rests with the cooperating agency or company. Burners are expected to curtail burning if, in their opinion, they are not getting adequate smoke dispersion, or if local weather factors are such that smoke problems could result. Conversely, if local weather conditions appear to be more favorable for burning than what was forecast, Burners may contact the appropriate Local Airshed Coordinator for an exception to the restriction. The Local Airshed Coordinator shall consult with the Monitoring Unit. If deemed appropriate, the Monitoring Unit may then grant an exception to the restriction.



- | | | | | | |
|----------------------------------|---|---------------------|---|---------------------------|---|
| 1. Kootenai |  | 4. Bitterroot |  | 8. A. Gallatin
B. Park |  |
| 2. Flathead |  | 5. Upper Clark Fork |  | 9. Missouri |  |
| 3. A. Clark Fork
B. Blackfoot |  | 6. Helena |  | 10. Yellowstone |  |
| | | 7. Beaverhead |  | | |

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APPENDIX B

Interpretation of National Weather Service Air Transport and Dispersion Forecasts

In order to interpret the National Weather Service Forecasts, the following guidelines should be used.

1. State Airshed 1 (Kootenai) and Airshed 2 (Flathead):

Use dispersion forecasts for FW Zone 4. For this forecast FW Zone 4 will be extended westward to the Idaho border. When there are significant differences within this zone, the NWS forecaster will so indicate by making a specific forecast for the northwest portion of the zone (i.e., Airshed Zone 1).

2. Airshed 3 (Blackfoot-Clark Fork) and Airshed 4 (Bitterroot):

Use dispersion forecast for FW Zone 5. For this forecast FW Zone 5 will be extended southward to encompass the entire Bitterroot Valley.

3. Airsheds 5,6, and 7 (Upper Clark Fork, Helena and Beaverhead):

Use dispersion forecasts for FW Zones 6 and 7. Due to the general elevational range and prevailing wind conditions found in these zones, we feel that pollution problems are minimal. However, the NWS forecasters will pay particular attention to both the Helena and Butte-Anaconda areas and if there are apparent problems in dispersion developing we will so indicate in the forecasts for these zones.

4. Airshed 8 (Gallatin):

Use dispersion forecasts for FW Zones 10 and 11. The main problem area within this zone appears to be in Bozeman and vicinity. The major effort and emphasis in the forecast will be concentrated in that area.

5. Airshed 9 (Missouri):



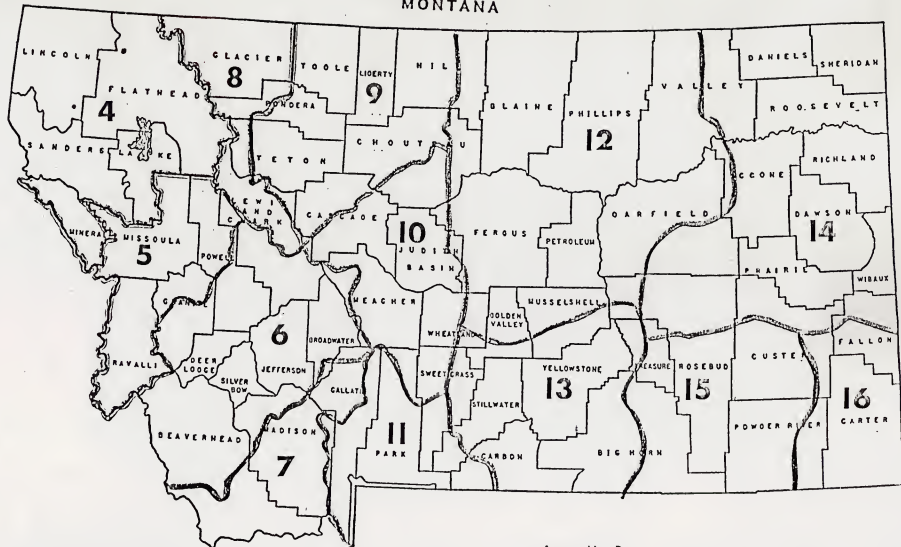
Use dispersion forecasts for FW Zones 8, 9, 12 and 14. The forecast for FW Zone 8 will come out of Missoula, the rest from Billings. This is the only airshed zone in which both Weather Service offices have some responsibility. We do not envision any problems as this zone has a very minor pollution history.

6. Airshed 10 (Yellowstone):

Use dispersion forecasts for FW Zones 13, 15 and 16. At this time, this airshed does not have any significant pollution problems due to slash disposal burning. However, in the Billings area some urban and industrial pollution does occur. Future industrial development in the lower Yellowstone airshed may produce pollution/dispersion problems. The Billings office will pay particular attention to these problems as they occur.



MONTANA



No. 1050 — County Outline Map
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Appendix B

